HANDWRITING

Measurements Standards and Methods

REPORT AND RESULTS OF

CHILLICOTHE, OHIO

SURVEYS IN WRITING

Each specimen in this monograph was written in two minutes and reproduced photographically, such as on this page reduced about one-third in photographing in order to economize space in printing.

LB 536
.L25

Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little

8-A Grade—Form, 75%; Movement, 83% (119 letters); Quality, 79%.

Thirty-five words a minute, even more than legible, is next to the phenomenal. A dynamic teacher, an alert pupil, well-balanced pedagogy and practice, are the secrets of super-excellence in speed or form or a combination of the two.

Little Jack Horner sat in a corner.
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8-B Grade—Form, 64%; Movement, 122% (174 letters); Quality, 93%.

The Purpose and Value of Handwriting Measurements, How to Make Them, and Goal-Medians of Achievement According to Age or Grade and Need or Efficiency

Comparison stimulates intelligence and initiation. Goals are something to aim at and aspire to. The value of educational measurements is that they encourage and confirm the strong and stimulate the weak, by providing objectives and how to attain them.

The purpose of this publication is (1) to encourage Handwriting Measurements, (2) to show how to make them, (3) to provide adequate standards or goals, and (4) to show what one city (Chillicothe) has done to raise the standard of writing on the part of regular teachers.

We will let Superintendent F. J. Prout explain briefly and show concretely just what he has accomplished, and how, following which we present an improved plan with higher objectives than he found available and which he has helped us materially to formulate:

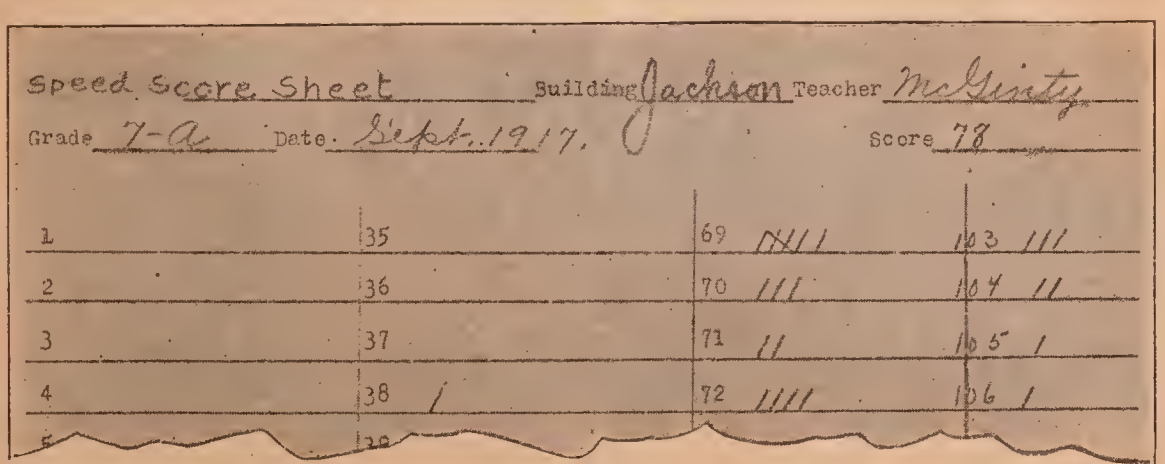
WRITING SURVEYS IN THE CHILLICOTHE, OHIO, PUBLIC SCHOOLS

By F. J. Prout, Supt. Chillicothe Schools.

The teachers' manuals of the present day writing systems are so practical that the teacher may be quite sure of good results in her writng work, even if her own penmanship is not of the best. The problem here is to get persistent, careful study and application of the manual instructions. In the past school year to insure such effort we mapped out a program of four writing surveys. These surveys were to chart the progress in grades 3-B to 8-A inclusive, of the writing in each room, both in speed and quality. The first survey was held on September 14, six days after the opening of school. At 8:30, on the morning of this day each of the principals in the five grade buildings went into one of the rooms and conducted the survey as follows:

1. Each child was given a sheet of ruled ink paper, at the top of which he recorded his name, age, grade and building.

2. With pens in hand, the principal told the children that all starting at the same moment, they would be given exactly two minutes to write the familiar nursery rhyme, "**Mary had a little lamb,**" as many times as they could. They were cautioned that not only were they to write rapidly, but the quality must be the best possible. At the given signal the class wrote as directed. All stopped upon a signal from the principal at the end of 120 seconds. The papers were collected by the teacher. In like manner the other rooms were visited by the principal. The teacher of each room, that evening, counted the number of letters written by each child in the two-minute exercise and divide this number by two. **This gave a statement of the speed in letters per minute.** This speed score was marked at a specified place at the top of the paper. The papers were now sent to the Superintendent's office. The speed scores of each child in each room were there tallied upon the following form sheet.



Speed Score Sheet Building Jackson Teacher McGinty

Grade 7-A Date Sept. 1917. Score 78

1	35	69 IIII	103 III
2	36	70 III	104 II
3	37	71 II	105 I
4	38 I	72 IIII	106 I
5	39		

From this sheet the median* speed score was easily found, and this became the score for the room and the teacher. From all the form tally sheets of each grade the median score for that grade was found, and designated **Chillicothe Median.** Thorndike had determined from thousands of papers gotten in similar exercises, what the median speed score in each grade is, in 28 cities. This is known as the **28-cities Score.** We now were able to determine,

(1) How the **Chillicothe Median Speed Score** of each grade compared with the **28-cities Median Speed Score** of this grade.

(2) How each teacher's room stood in comparison (a) with this **28-cities Score,** and (b) with the other teachers of her grade in our city. These results were tabulated, and show at a glance the comparisons referred to above.

* The "Median" is the score of the middle paper when the specimens are arranged in the order of the highest grade down to the lowest, or vice versa. The Median paper of a group of eleven is the sixth; of twelve, the average of the sixth and seventh.

RESULTS OF WRITING TEST SEPT. 14, 1917

Speed Grade

8-A

Miss Rooney ---------79
Miss McGinty ---------75
28-cities Median ------83
Chillicothe Median ----75

8-B

Miss Burkline ---------85.5
28-cities Median -------79
Miss McGinty ---------75
Chillicothe Median -----70
Miss Chapman --------64
Mrs. Hayes ----------59.5
Miss Rooney ---------58.5

7-A

Miss Powell ----------85
Miss Palmer ----------82
Chillicothe Median ------75
28-cities Median ------75
Miss Burkline --------70.5
Miss Rinehart --------62

7-B

Miss Palmer ----------79
Miss Floyd ----------83
Miss Rinehart --------77.5
Miss Powell ----------76
Chillicothe Median ----75
28-cities Median ------70
Mrs. Greene ----------64
Mrs. Hayes ----------54

6-A

Miss Wetzel ----------76
Mrs. Greene ----------73.5
Miss Floyd ----------72
28-cities Median ------64
Chillicothe Median -----64
Miss M. Knab----------59.5
Miss Carr ----------61
Miss Organ ----------55

6-B

Miss Wetzel ----------74
Miss Stevens Dept------72
Miss M. Knab----------65
Miss Carr ----------63
Mr. Williams ---------63
Chillicothe Median -----64
Miss Organ ----------58
Miss Daily ----------53
28-cities Median -- ---61

5-A

Miss Falter ----------90
Chillicothe Median -----63.5
Mrs. Presnell, Dept----63
28-cities Median -------57
Miss Stevens, Dept-----63
Miss Cook ----------54.5
Kraft, Dept. ---------72
Miss Falter ----------65
Mr. Williams --------64
Miss Brown ----------63
Miss Cook ----------60.5

5-B

Chillicothe Median -----60
Miss Cook Dept-------54
28-cities Median -------52
Miss W. Noth----------53

4-A

Miss Jones ----------67.5
Miss Haynes ----------53
Chillicothe Median -----50
Miss Kraft, Dept------47
28-cities Median ------47
Miss Orth ----------35.5

4-B

Miss Kern ----------63
Miss Huffman ---------56
Miss Jones ----------54
Miss Haynes ----------50.5
Chillicothe Median -----49
28-cities Median ------48
Miss Medley ----------45
Miss Orth ----------40
Miss McCoy ----------39.5
Miss Swartz ----------37

3-A

Miss Black ----------64
Chillicothe Median ------47
Miss Huffman ---------46
Miss McCoy ----------45
28-cities Median -------38
Miss E. Knab----------31

3-B

Miss Galaliett ---------62
Miss Black ----------45
Chillicothe Median ------39
28-cities Median --------35
Miss Andrews ---------38
Miss Sullivan ---------34
Miss Medley ----------33.3
Miss Bentz ----------33
Miss Plumly ----------27

The next step was to get the quality scores. This was done at the Superintendent's office, by comparing each child's exercise with samples of writing on the Scale sheet. When we found the sample on the Scale sheet which most nearly resembled the child's effort, the score on this Scale sheet which represented that sample was marked on the back of the child's paper. The papers of a room were thus graded for quality. Then they were gone over a second time, and new scores given without being aware of the first scores. The average of these scores was the final score given the child. The median quality score for the room and for each grade was next determined. Tabulations were made, from which comparisons were instantly available. These quality tabulations are as follows:

RESULTS OF WRITING TEST SEPT. 14, 1917

Quality Grade

8-A

Miss McGinty ---------- 9
Miss Rooney ----------11.7
Chillicothe Median -----10
28-cities Median -------10.9

8-B

Miss Chapman --------11
Miss Rooney ----------10.5
Miss Burkline --------10.2
Mrs. Hayes ---------- 9.8
Miss McGinty ---------- 9.2
Chillicothe Median -----10.5
28-cities Median -------10.7

7-A

28-cities Median -------10.4
Chillicothe Median -----10
Miss Burkline ---------10
Miss Rinehart ---------- 9.7
Miss Powell ---------- 9.5
Miss Palmer ---------- 9.2

7-B

Mrs. Greene ----------10.2
28-cities Median -------10.1
Miss Powell ----------10
Miss Rinehart ---------- 9.7
Miss Floyd ---------- 9.7
Chillicothe Median ----- 9.5
Miss Palmer ---------- 9
Mrs. Hayes ---------- 8.5

6-A

Miss Organ ----------10.5
28-cities Median ------- 9.8
Miss M. Knab---------- 9.5
Miss Carr ---------- 9.2
Mrs. Greene ---------- 9
Chillicothe Median ----- 9
Miss Wetzel ---------- 8.5
Miss Floyd ---------- 8

6-B

28-cities Median -------- 9.6
Miss Organ ---------- 9
Mr. Williams ---------- 9
Miss Carr ---------- 9
Miss Daily ---------- 8.5

Miss Knab ---------- 8.5
Miss Wetzel ---------- 8.5
Chillicothe Median ---- 8.5
Miss Stevens, Dept---- 8

5-A

28-cities Median ------ 9.3
Mrs. Presness, Dept---- 9
Miss Cook ---------- 8.8
Miss Stevens, Dept---- 8.5
Chillicothe Median ---- 8.5
Miss Falter ---------- 7.5

5-B

Miss Noth ----------10
Miss Brown ---------- 9.2
28-cities Median ------ 9
Mr. Williams ---------- 8.5
Miss Cook ---------- 8.5
Chillicothe Median ---- 8.5
Miss Falter ---------- 8

Miss Kraft, Dept------ 8
Miss Cook, Dept------ 8

4-A

Miss Haynes ---------- 9.5
28-cities Median ------ 8.7
Kraft, Dept. ---------- 8.5
Chillicothe Median ---- 8.5
Miss Jones ---------- 7.8
Miss Orth ---------- 7.7

4-B

Miss Hufffman ------- 9
Miss Haynes ---------- 9
Miss McCoy ---------- 9
Miss Medley ---------- 8.7
Chillicothe Median ---- 8.5
28-cities Median ------ 8.5
Miss Jones ---------- 8
Miss Swartz ---------- 8
Miss Kern ---------- 8
Miss Orth ---------- 7.7

3-A

Miss Huffman ---------- 9
Chillicothe Median ---- 8.5
28-cities Median ------- 8.2
Miss E. Knab -------- 8
Miss McCoy ---------- 8
Miss Black ---------- 8

3-B

Miss Sullivan ---------- 9
Miss Plumly ---------- 9
Miss Andrews -------- 9
Miss Black ---------- 8.5
Miss Medley ---------- 8.5
Chillicothe Median ---- 8.5
Miss Bentz ---------- 8.2
28-cities Median -------- 7.9
Miss Galliett ---------- 8

By a system which Thorndike has worked out, the speed and quality scores were now combined and were expressed in a single composite score as follows:

WRITING SURVEY SEPT. 14, 1917

Composite Grades

8-A

Miss McGinty --------66
Miss Rooney ---------86
Chillicothe Median ----73
28-Cities Median ------83

8-B

Miss Chapman -------74
Miss Rooney ---------68
Miss Burkline --------79
Mrs. Hayes ----------64
Miss McGinty --------66
Chillicothe Median ----74
28-cities Median ------80

7-A

28-cities Median ------73
Chillicothe Median ----75
Miss Burkline --------71
Miss Rinehart --------65
Miss Powell ----------74
Miss Palmer ---------70

7-B

Mrs. Greene ----------68
28-cities Median ------71
Miss Powell ----------73
Miss Rinehart --------73
Miss Floyd ----------75
Chillicothe Median ----69
Miss Palmer ---------68
Mrs. Hayes ----------52

6-A

Miss Organ ----------63
28-cities Median ------67
Miss M. Knab---------62
Miss Carr ----------60
Mrs. Greene ----------65

Chillicothe Median ----60
Miss Wetzel ----------63
Miss Floyd ----------57

6-B

28-cities Median --------63
Miss Organ ----------57
Mr. Williams ---------60
Miss Carr ----------60
Miss Daily ----------51
Miss Knab ----------57
Miss Wetzel ----------62
Chillicothe Median ----57
Miss Stevens, Dept----57

5-A

28-cities Median -------59
Mrs. Presnell, Dept----60
Miss Cook ----------53
Miss Stevens, Dept----56
Chillicothe Median ----57
Miss Falter ----------62

5-B

Miss Noth ----------62
Miss Brown ----------61
28-cities Median ------54
Mr. Williams --------57
Miss Cook ----------55
Chillicothe Median ----60
Miss Falter ----------53
Miss Kraft, Dept------57
Miss Cook, Dept--------48

4-A

Miss Haynes ----------58
28-cities Median ------49

Miss Kraft, Dept------48
Chillicothe Median ----46
Miss Jones ----------53
Miss Orth ----------38

4-B

Miss Huffman --------56
Miss Haynes ---------54
Miss McCoy ----------48
Miss Medley ----------48
Chillicothe Median ------49
28-cities Median ------46
Miss Jones ----------48
Miss Swartz ----------39
Miss Kern ----------52
Miss Orth ----------39

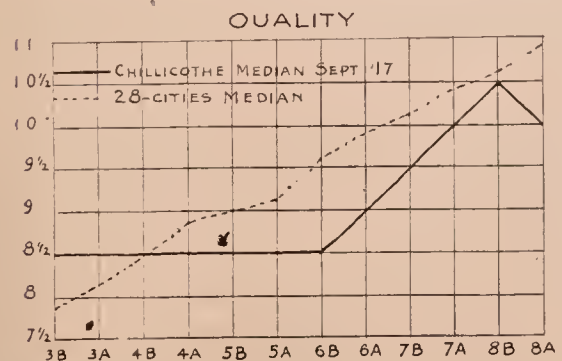
3-A

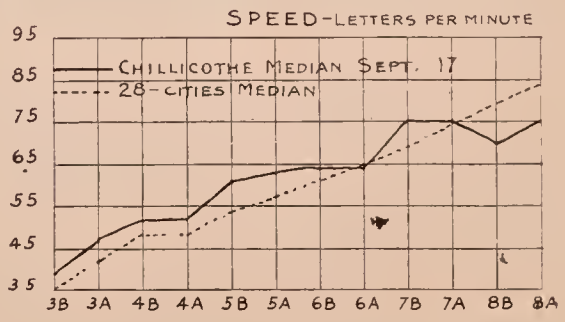
Miss Huffman --------51
Chillicothe Median ----48
28-cities Median ------41
Miss E. Knab---------36
Miss McCoy ----------43
Miss Black ----------53

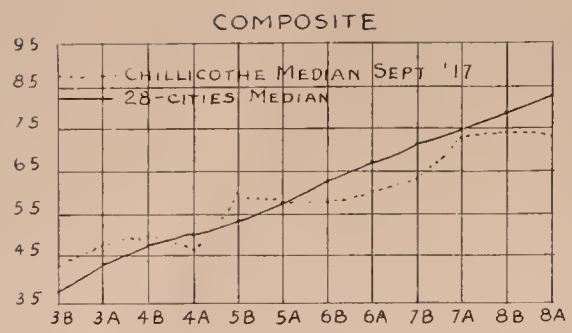
3-B

Miss Sullivan ---------45
Miss Plumly ----------42
Miss Andrews --------47
Miss Black ----------47
Miss Medley ----------42
Chillicothe Median -----44
Miss Bentz ----------38
28-cities Median ------37
Miss Galliett ---------52

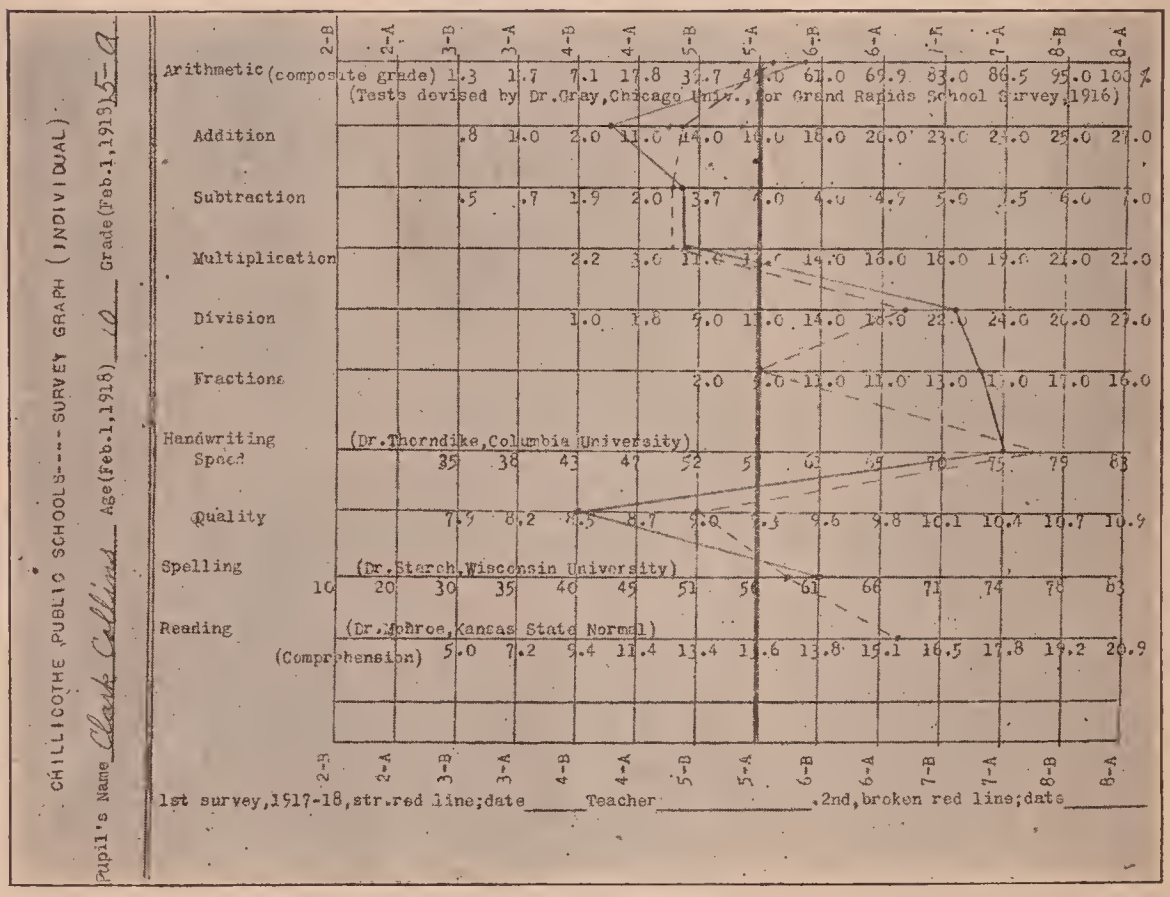
Before the mimeographed results were sent to the teachers, a graph of these results was made, showing the speed and quality and composite results in each grade compared with the **28-cities Scores** of that grade. These graphs follow:







Five days after the survey had been made by the principals these tabulated results and graphs were put into the hands of each teacher. She saw at a glance whether or not her room was up to standard. If not up to standard, her job during the year now before her was to improve the work of her children so that by June the room would be up to, or ahead of, the **28-cities Score.** In this effort her problem was to know which boys and girls were below standard. The papers from her room gave her that information at once, and the graph sheets showed the children by diagram how much each one was above or below the standard in speed and quality.



Her instructions then became largely individual. Pupils whose quality was good, but whose speed was too low, were hurried up; those who wrote as rapidly as the standard were made to emphasize quality. All were urged to improve before the next survey.

Surveys should aid Teacher and Pupil

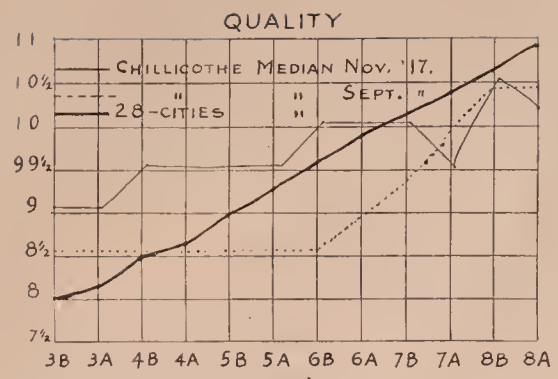
This second survey was given on the 22nd day of November. The copy was changed to **"Boy Blue, come blow your horn."** The methods of conducting the survey and stating the results were the same as for the first survey. When tabulations were in the teachers' hands they were able to see not only how they compared with the **28-cities Score**, the **Chillicothe Median**, and each other, but also how much progress they had made since September 14. The graphs and tabulations for this survey are here given.

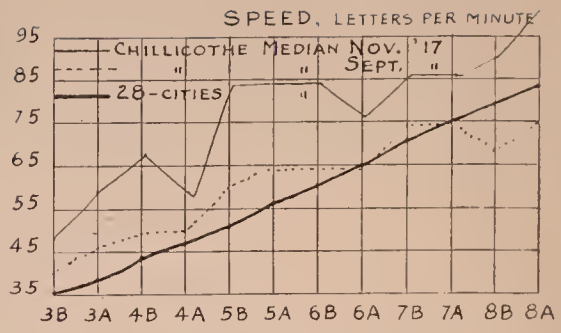
COMPARISON OF WRITING SURVEYS

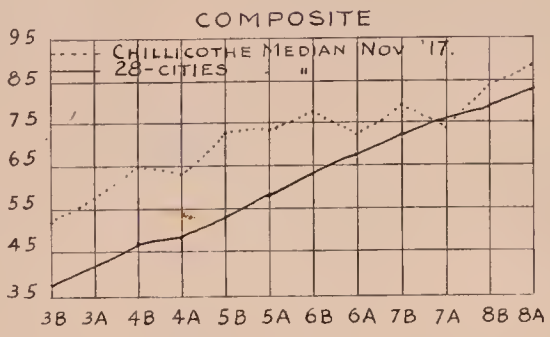
Sept. 14 and Nov. 22, 1917

	Speed, Sept.	Speed, Nov.	Quality, Sept.	Quality, Nov.	Composite Grade Nov.
8-A					
Chillicothe					
Rooney	79	108	11.7	10	89
Median	75	102	10.	10.2	87.7
McGinty	75	100	9	10	85
Chapman		81.7		11.2	84.6
28 Cities					
Median	83	83	10.9	10.9	83
8-B					
Hayes	59.5	103.5	9.8	10.5	90.2
Burkline	85.5	98	10.2	10.5	87.5
Chapman	64	9.5	11	11	87.2
McGinty	75	89	9.2	11	86.5
Chillicothe					
Median	70	92	10.5	10.5	84.5
McLaughlin	64	91.5	11	10	80.7
28 Cities					
Median	79	79	10.7	10.7	80
Rooney	58.5	85	10.5	10	77.5
7-A					
Burkline	70.5	80	10	11	82
McLaughlin	85	92.7	9.5	9.7	79.3
Rinehart	62	77	9.7	10.7	78.5
Chillicothe					
Median	75	75	10.4	10.4	75
28 Cities					
Median	75	85.2	10	9.5	74.1
Barrington	82	99.5	9.2	9	77.7
7-B					
Hayes	54	86	8.5	11	91.7
Haynes	76	92	10	10.2	82
Rinehart	77.5	80	9.7	10.5	78.5
Floyd	83	72	9.7	11	78
Chillicothe					
Median	75	86	9.5	10.	78
Greene	64	84	10.2	10.	77
Palmer	79	90	9.	9.5	76.5
28 Cities					
Median	70	70	10.1	10.1	71
6-A					
Carr	61	72	9.2	10.5	74.5
Greene	73.5	92.5	9.	9.	74.2
Chillicothe					
Median	64	74.5	9.	10.	72.2
Wetzel	76	78	8.5	9.5	70.5
May Knab	59.5	72	9.5	10.	71
Floyd	72	70	8.	10.	70
28 Cities					
Median	65	65	9.8	9.8	67
6-B					
Williams	63	74	9	11	79
Organ	58	74	9	11	79
Dept. Stevens	72	94.2	8	9.5	78.6
May Knab	65	93	8.5	9.5	78
Wetzel	74	86	8.5	10	78
Carr	63	84	9	10	77
Chillicothe					
Median	64	84	8.5	10	77
Daily	53	84	8.5	9.	70
28 Cities					
Median	61	61	9.6	9.6	7.3

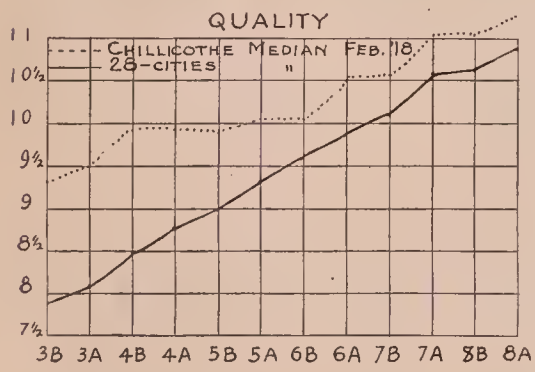
	Speed, Sept.	Speed, Nov.	Quality, Sept.	Quality, Nov.	Composite Grade Nov.
5-A					
Dept. Stevens	63	84	8.5	10.	77
Dept. Presnell	63	84.7	9.	9.5	73.8
Chillicothe					
Median	63.5	84	8.5	9.5	73.5
Cook	54.5	76	8.8	9.5	69.5
Falter	90	72	7.5	9.5	67.5
28 Cities					
Median	57	57	9.3	9.3	59
5-B					
Dept. Kraft	72	101.5	8.	9.5	82.2
Brown	63	96	9.2	9.5	79.5
Chillicothe					
Median	60	84	8.5	9.5	73.5
Falter	65	74.5	8.	10	72.2
Dept. Cook	54	72	8.	10.	71
Noth	53	71.5	10	9.5	67.2
Cook	60.5	84	8.5	8.5	66.5
Williams	64	60	8.5	10.	65
28 Cities					
Median	52	52	9	9	54
4-A					
Dept. Kraft	47	82	8.5	9.2	67
Jones	67.5	84	7.8	9	65
Caldwell	53	69.5	9.5	9	62.7
Chillicothe					
Median	50	61	8.5	9.5	62
Orth	35.5	47.5	7.7	9.5	55.2
28 Cities					
Median	47	47	8.7	8.7	49
4-B					
Huffman	56	81	9	9.5	72
Kern	63	77	8	9.5	70
Chillicothe					
Median	49	68	8.5	9.5	65.5
Caldwell	50.5	74	9	9	65
McCoy	39.5	58	9	10	64
Jones	54	72	8	9	64
Medley	45	53.5	8.7	10	61.7
Swartz	37	51	8	9.5	57
Orth	40	48.5	7.7	9.7	57.2
28 Cities					
Median	43	43	8.5	8.5	46
3-A					
Huffman	46	60	9	9.5	61.5
Black	64	66	8	9	61
McCoy	45	56	8	9.5	59.5
Chillicothe					
Median	47	60	8.5	9.	58
Esther Knab	31	55	8	8.5	52
28 Cities					
Median	38	38	8.2	8.2	41
3-B					
Sullivan	34	62	9	9	59
Barrington	45	61	8.5	8.5	55
Galliett	62	54	8	9	55
Plumly	27	35	9	10	52.5
Chillicothe					
Median	39	49	8.5	9.	52.5
Andrews	38	48	9.	9.	52
Bentz	33	46	8.2	9.	51
Medley	33.3	41.5	8.5	9	48.7
28 Cities					
Median	35	35	7.9	7.9	37

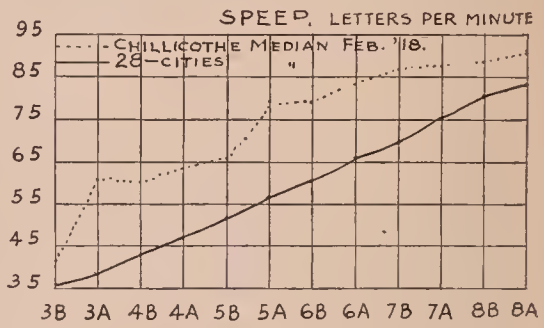


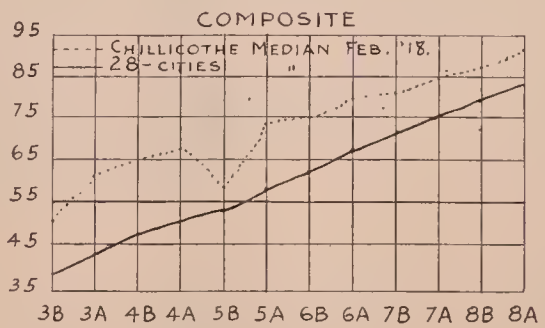




Notice that the Grades 7-A, 8-B and 8-A have lost in quality, and gone way up in speed. The tabulations show which teachers were responsible for this. They in turn placed the responsibility upon the guilty students; and in the third survey of February 8, this situation was changed satisfactorily, as shown in the following graphs.

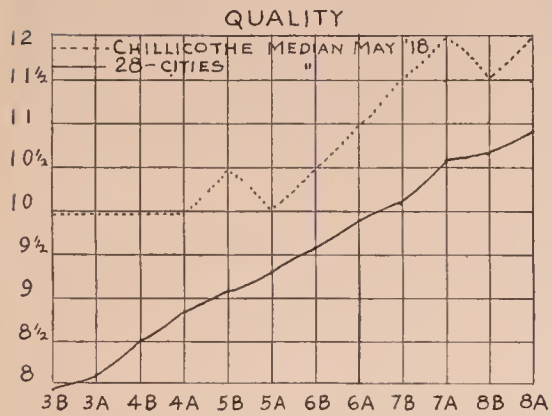


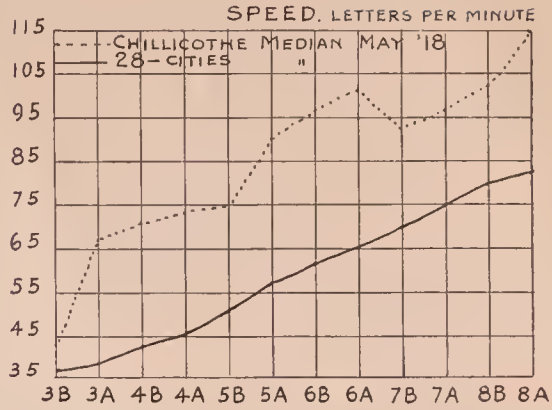


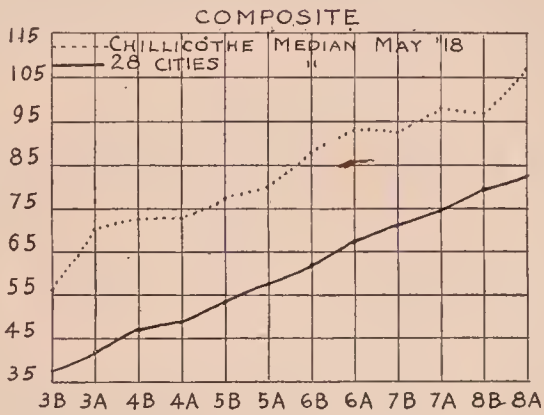


Concrete and Convincing Graphs

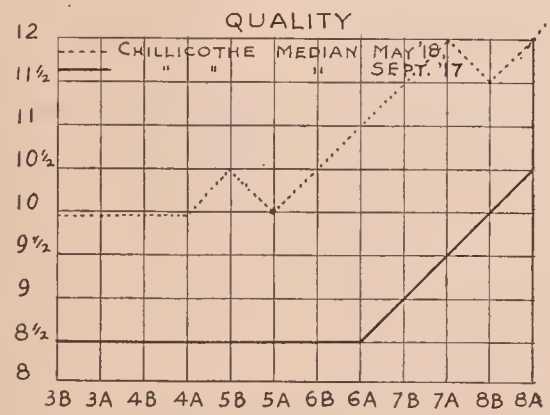
The last survey was given May 7. The graphs are as follows.

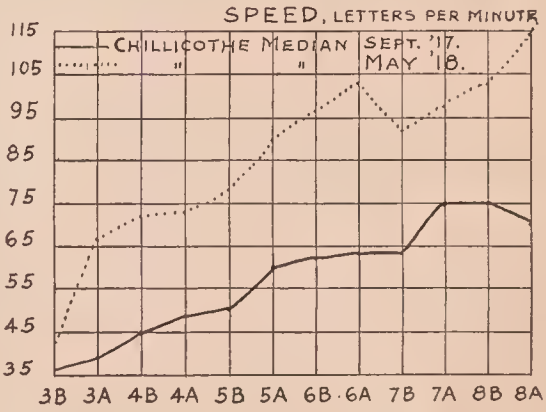


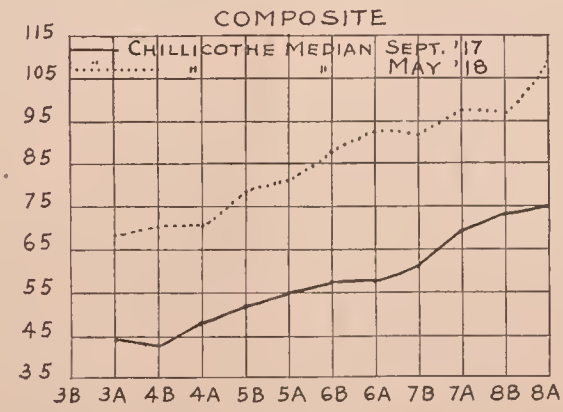




This time it is to be noted. we prepared graphs which showed the city scores of September in quality, speed and composite grade, in comparison with May. This gave us a picture of the year's growth.







In the final paragraphs of the discussion of this topic, one should emphasize the very obvious stimulus which comes from such successive comparative measurements. The teachers are stimulated as possibly nothing else can stimulate them. They enjoy comparing their results and progress with that of their fellow-teachers, and with the country at large. The youngsters are stimulated,—indeed they worked out of school hours in order to improve, and so help bring up their class room scores.

We have had no writing supervisor in this school system for the last two years. This measuring system goes far towards making one unnecessary. The Zaner manuals which we are using make it possible for any teacher, **with proper effort on her part**, to teach writing successfully. This measurement of results furnishes all the stimulus needed to insure that thorough study and use of the manual. Indeed I venture that more intensive study this year has been made of the manuals by the teachers than in all the preceding five years put together.

The labor of conducting these surveys and preparing the tabulations is not so great but that any school organization can take care of it. The extra expense for our four surveys for extra labor was approximately $45.00. The school systems which inaugurate some such survey scheme and carry it through successfully, will be very richly repaid for the time, effort and money that will be involved.

F. J. PROUT.

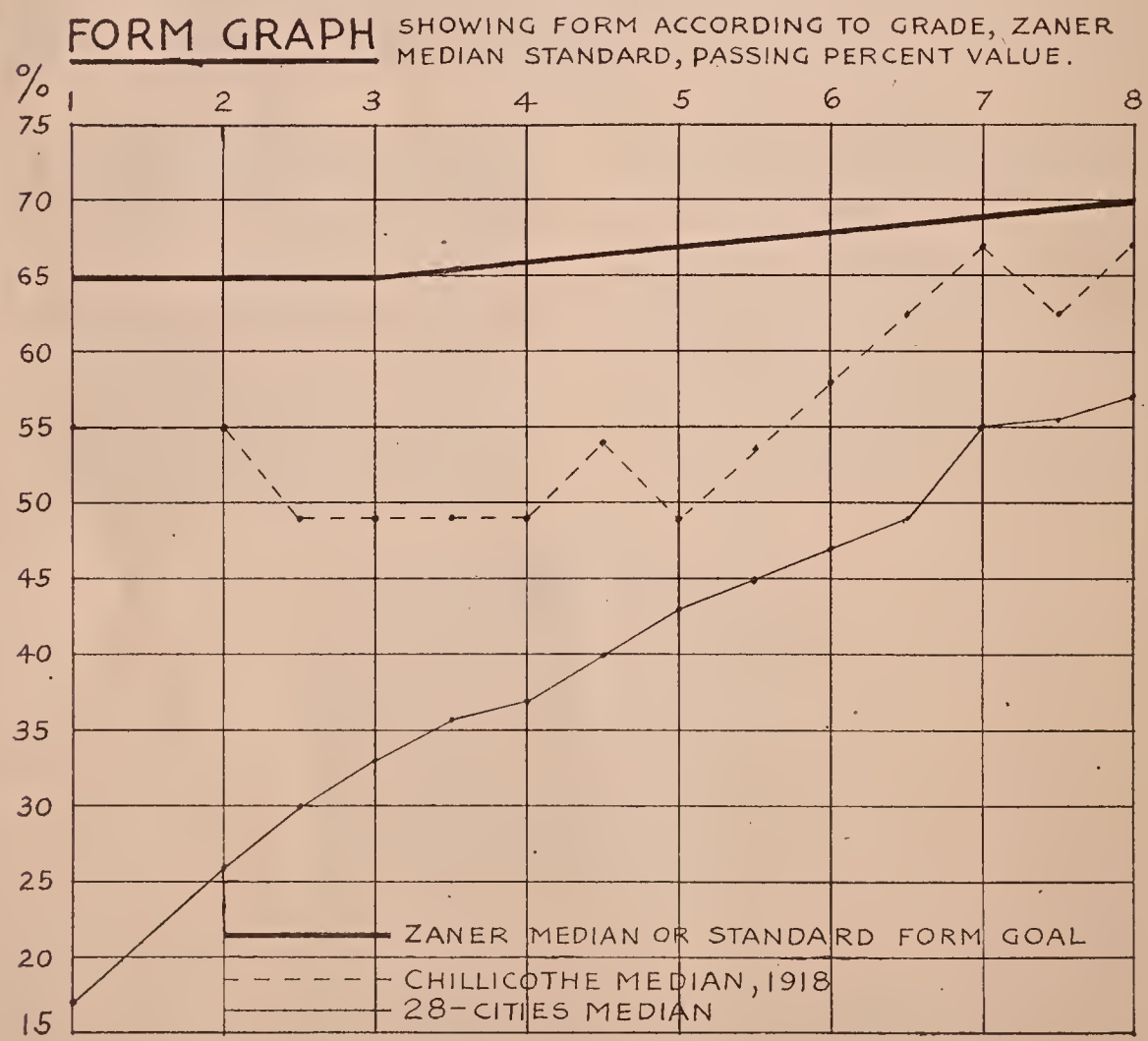
The Thorndyke Scale was used in Chillicothe to make the measurements, but proved of no value in the primary grades, hence no measurements were made in grades One and two.

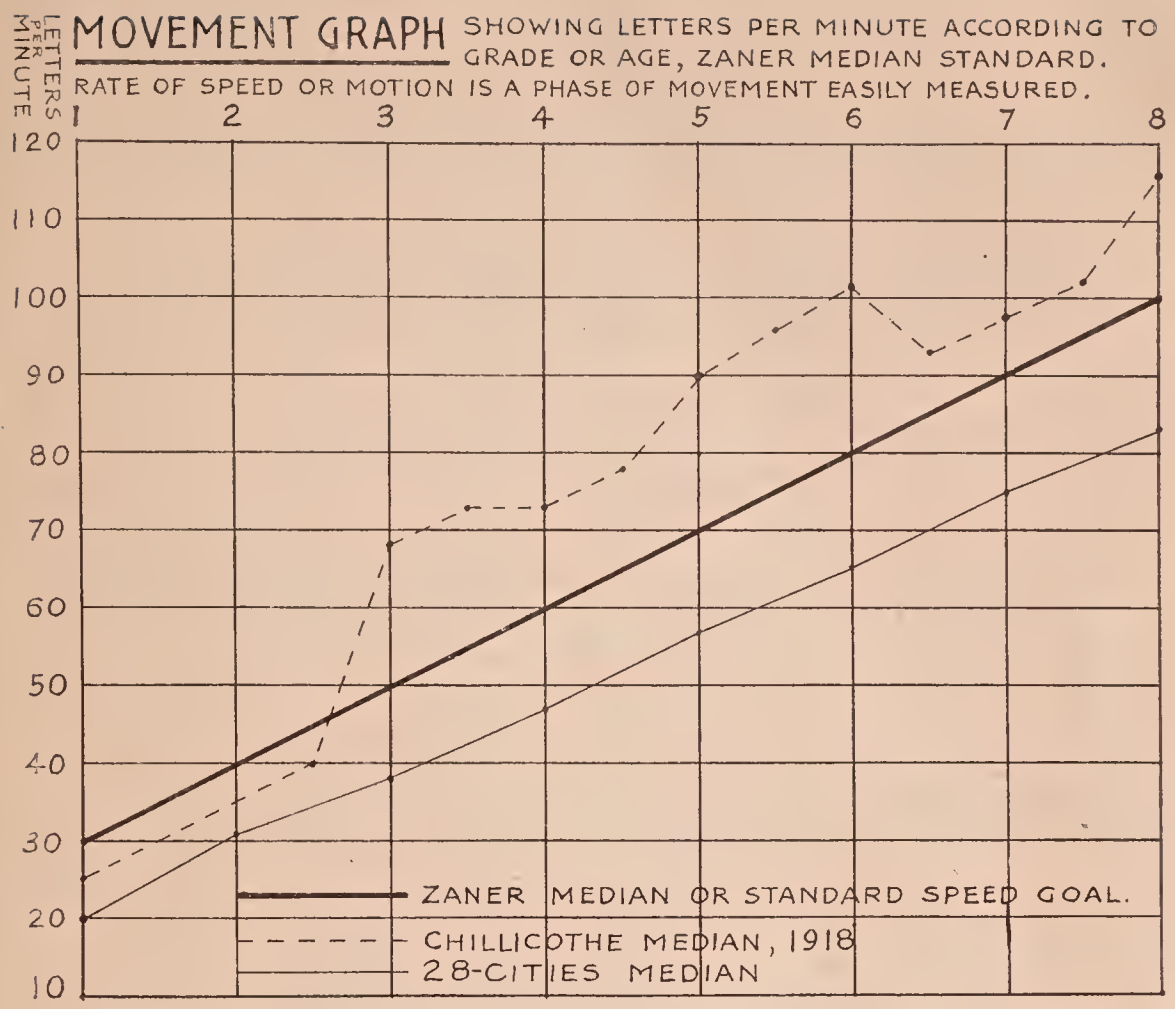
"Educational Measurements" by Daniel Starch, was used as a basis of comparison and translations from points into per cent.

The "28-cities Median" is the findings of results some years ago in 28 cities, in which evidently the penmanship was poor rather than good.

The specimens presented show an almost phenomenal high rate of speed and an unusually good quality of form considering the speed . Not the average but the better specimens were selected for reproduction. (C. P. Z.)

NEW FORM, MOVEMENT AND QUALITY, HANDWRITING GRAPHS AND GOALS ON A PERCENTAGE BASIS





DIRECTIONS FOR SECURING THE PERCENTAGE OF MOVEMENT OR SPEED (Letters Per Minute).

School Grade	Per cent Coefficient
1	7/3
2	7/4
3	7/5
4	7/6
5	7/7
6	7/8
7	7/9
8	7/10

To convert movement or speed into per cent.

The per cent for each grade is obtained by multiplying the letters per minute by the per cent coefficient for the grade.

Example: A 7-A pupil has a speed score of 84. The per cent coefficient for the seventh grade (see table) is 7/9. Thus, $84 \times 7/9 = 65\frac{1}{3}\%$.

The passing per cent for each grade is 70%. In Grade One, the number of letters is 30, therefore, each letter is equal to 7/3%.

THE ZANER HANDWRITING SCALES AND STANDARDS

The three Form, Movement and Quality Graphs shown herewith, were constructed from measurements made in accordance with the Zaner Handwriting Scales. (Scale One is for Grades One and Two. Scale Three is for Grades Three and Four. Scale Five is for Grammar Grades and High Schools. Price, postpaid, 1 scale, 25 cents; 3 scales, 50 cents; per dozen, $1.28.)

The Specimens of Handwriting shown herewith were measured by the Zaner Scales and Standards, with the results indicated thereon. For the first time, specimens from all grades can be measured in Form and Movement and converted into per cent by simple methods and in conformity with school-room custom and need.

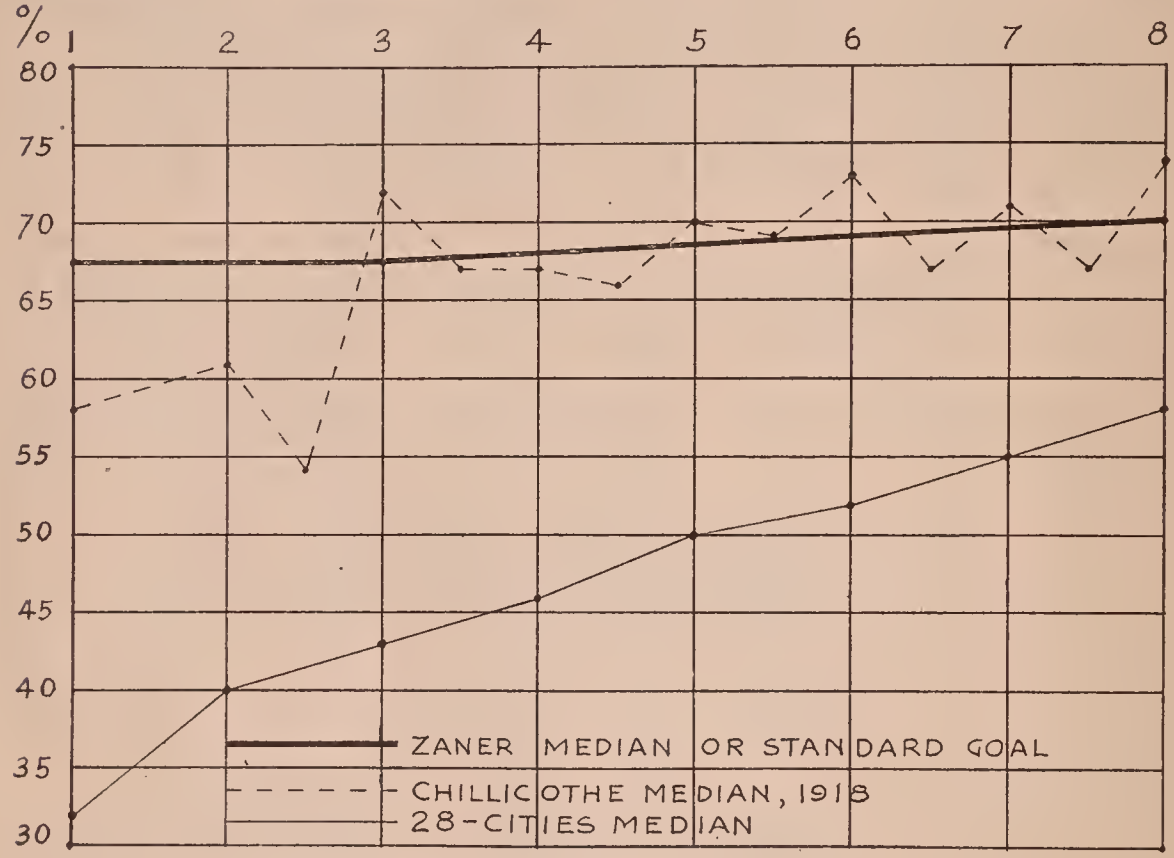
Form and Movement Need to Balance

DIRECTIONS FOR SECURING THE QUALITY VALUE OR COMPOSITE SCORE

To Find the Quality or Composite Score.

Add the per cent for form to the per cent for movement or speed and divide by two; this gives the per cent for quality.

QUALITY GRAPH SHOWING COMPOSITE SPEED AND FORM MEDIAN STANDARDS OR VALUES.
QUALITY RELATES TO SPEED OR MOVEMENT AS WELL AS TO FORM.
QUALITY IS A COMBINATION OF FORM AND MOVEMENT VALUES.



COMPARATIVE QUALITY VALUES EXPRESSED IN FIGURES AND SHOWN IN QUALITY GRAPH

School Grade	Form %	Movement Letters per Min.	Quality		
			Zaner	Chillicothe	28-Cities
1	65	30	67½ %	58%	32%
2	65	40	67½	61	40
3	65	50	67½	72	43
4	66	60	68	67	46
5	67	70	68½	70	50
6	68	80	69	73	52
7	69	90	69½	71	55
8	70	100	70	74	58

The Chillicothe Survey indicates a number of important things:

First, that the 28-cities median, or so-called standard, is too low as a standard for efficient instruction in writing (and we have no moral right to aim below efficiency).

Second, that the Thorndike and Ayres Scales are not suited to lower grades.

Third, that Chillicothe stimulated speed at the expense of form.

Fourth, that surveys made in the right spirit and manner stimulate and improve the teaching and the writing.

The author of the Zaner Method of Writing has been studying for a number of years the problem of standards in writing from the viewpoint of the teacher and learner, and as a result of this experience in connection with a number of specialists and teachers, based upon school-room results, certain standards have been decided upon for **form** and for **movement** as shown in the three preceding graphs.

These standards are upon a 100 per cent basis, 65 to 70 being passing grades in form according to age and grade, and 30 to 100 letters a minute being passing grades in speed according to age and grade.

These minimum passing standards are the result of wide observation, special study, examination of thousands of specimens of writing from the first to the twelfth grade, and careful comparison with well-known published scales, survey reports, etc.

The standard of form or quality is based upon legibility and sightliness, and the standard of movement or speed is based upon mental alertness and manual skill.

In examining the Zaner Form Graph, the natural question will be, "Why does the 28-cities median start so low, and why does the Zaner median start so high?"

The answer is simple. Most, if not all, of the 28-cities median was the result of teaching **small** writing to children in the first and second grades, whereas the Zaner median is the result of teaching larger writing to children than to adults.

Two things make writing the most difficult universal, artificial art that humanity has to acquire—size and speed, for writing is the smallest and speediest art everyone is expected to acquire.

Enlarging writing and reducing the speed makes it less difficult and thereby brings it within child capacity. It but recognizes and practices the fundamental principle, discovered and announced a quarter of a century or so ago by G. Stanly Hall or some other educational seer, that **"child writing should be as much larger than adult writing as the child is smaller than the adult."** This means capacity as well as size or age of child, and it is as true of speed as of size.

Large writing for children means not only better formation, but better movement, as it makes possible the use of the arm muscles from the start instead of those of the fingers, and it thereby reduces the tendency to grip abnormally.

Fortunately, therefore, larger writing for the child than for the adult promotes better form and better movement which means better health, easier reading, swifter writing, and higher efficiency in the beginning as well as in the end.

The Zaner Writing Scales and Standards conform to and confirm that educational doctrine that the child should be instructed in the light of its immediate limitations and needs and not that of remote adult capacity, which is the result of training and growth.

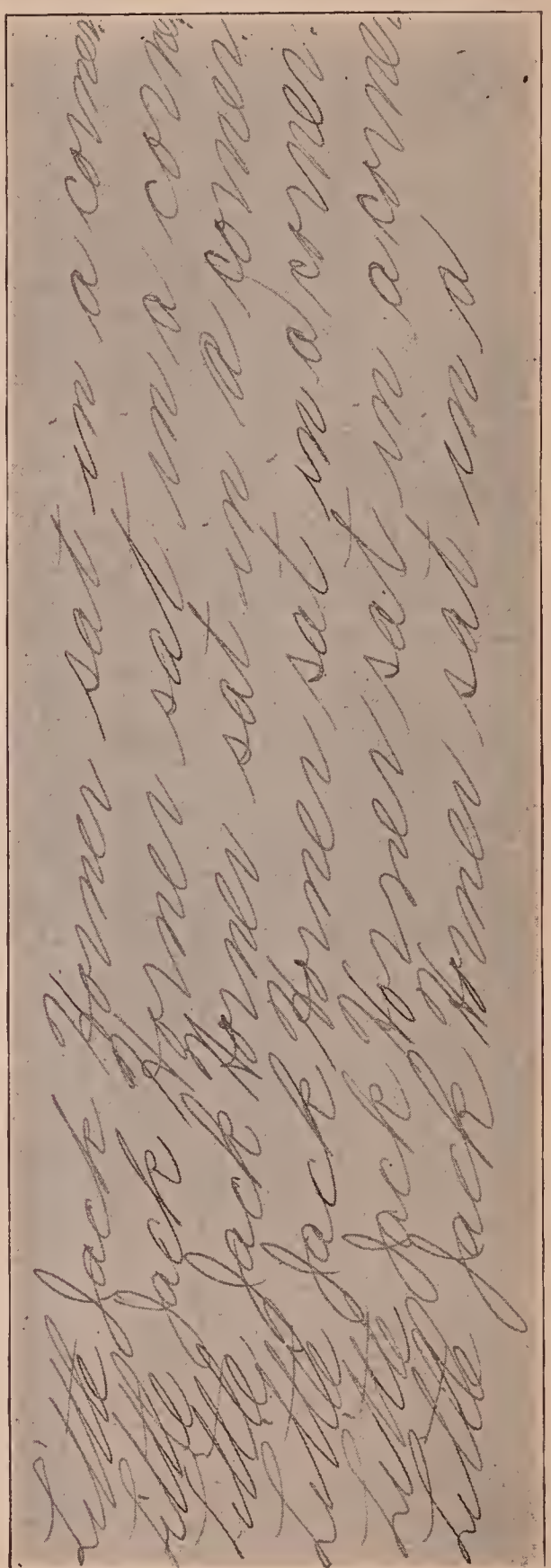
But the Zaner Method, Scales, and Standards not only start the child right, but see to it that writing conditions progress as he grows and achieves, and it thus ends right. They feature the same kind of perception (form) and performance (movement) from the beginning to the end, increasing the quality (form) and intensity (speed) from year to year. For as size is reduced, quality and effort is inincreased, and as speed is increased, intensity of effort is also in-

creased. Gradual reduction in size of form from year to year, particularly in the primary grades, automatically stimulates finer co-ordination of mental and manual effort and higher speed. The improvement from year to year, is one of quality and intensity of effort rather than of form and movement, as these are made possible almost from the start through large writing which promotes legibility and freedom from the beginning.

Sizes as well as exercises are employed to promote form and movement. Sizes serve as the basis of progress in the primary grades, and exercises as the basis of improvement in the grammar grades.

The message and secret of efficiency is larger writing for children than adults; Scales based upon age and need; Zaner Goal Medians and Standards to aspire to and measure by; and Zaner Method Manuals to provide pedagogic and practical generalities and details for the teachers.

The Chillicothe Survey reveals by comparison that the Zaner Method of Writing possesses not only high form qualities from the beginning to the finishing grades, but even higher speed possibilities in all grades. Form, Movement and Quality are co-ordinated and balanced in such proportions as to serve written language work from year to year.

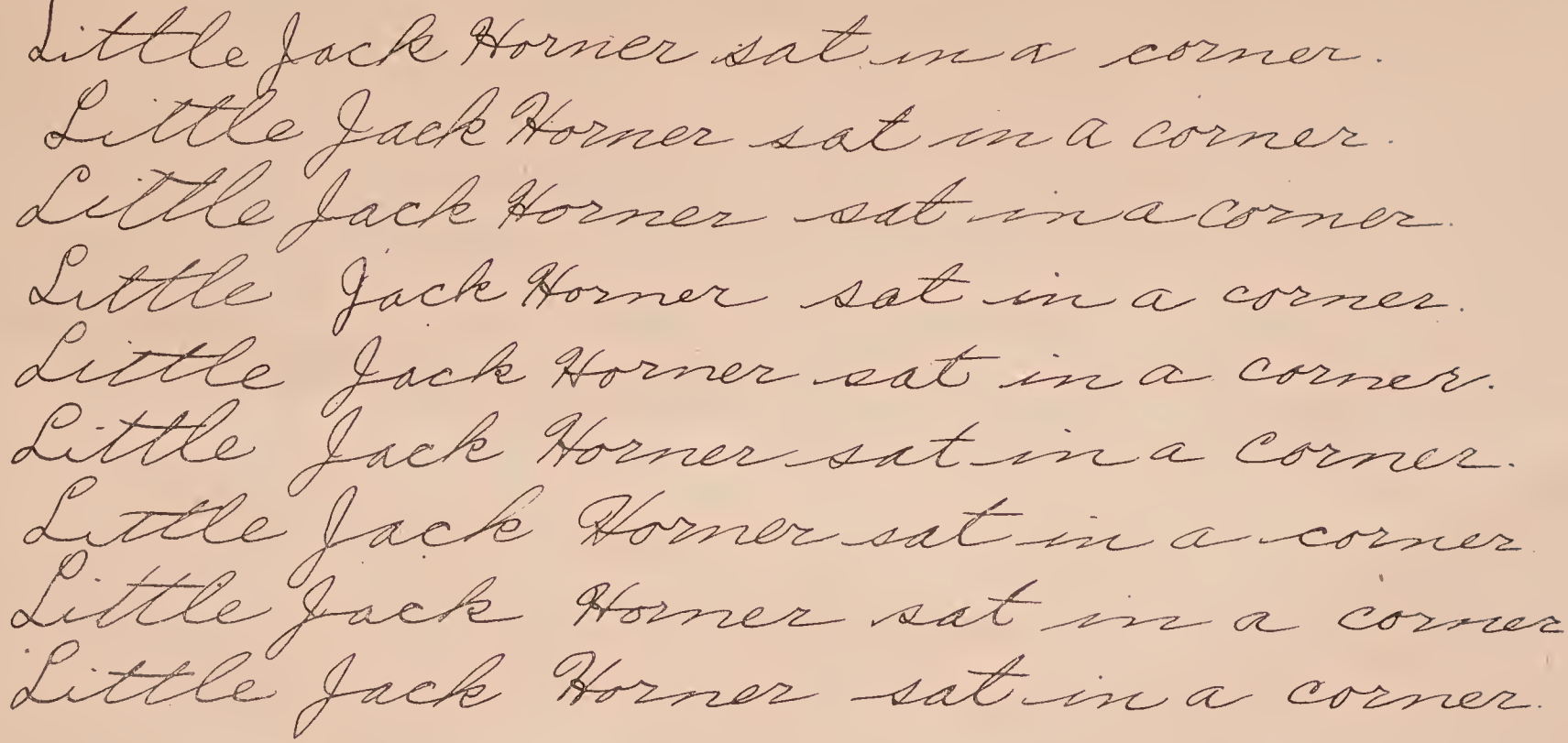


3-A Grade—Form, 65%; Movement, 116% (83 letters per minute); Quality, 91%.

COPIES

of this monograph can be had for 10 cents by addressing the publishers—Zaner & Bloser Co., Columbus, Ohio

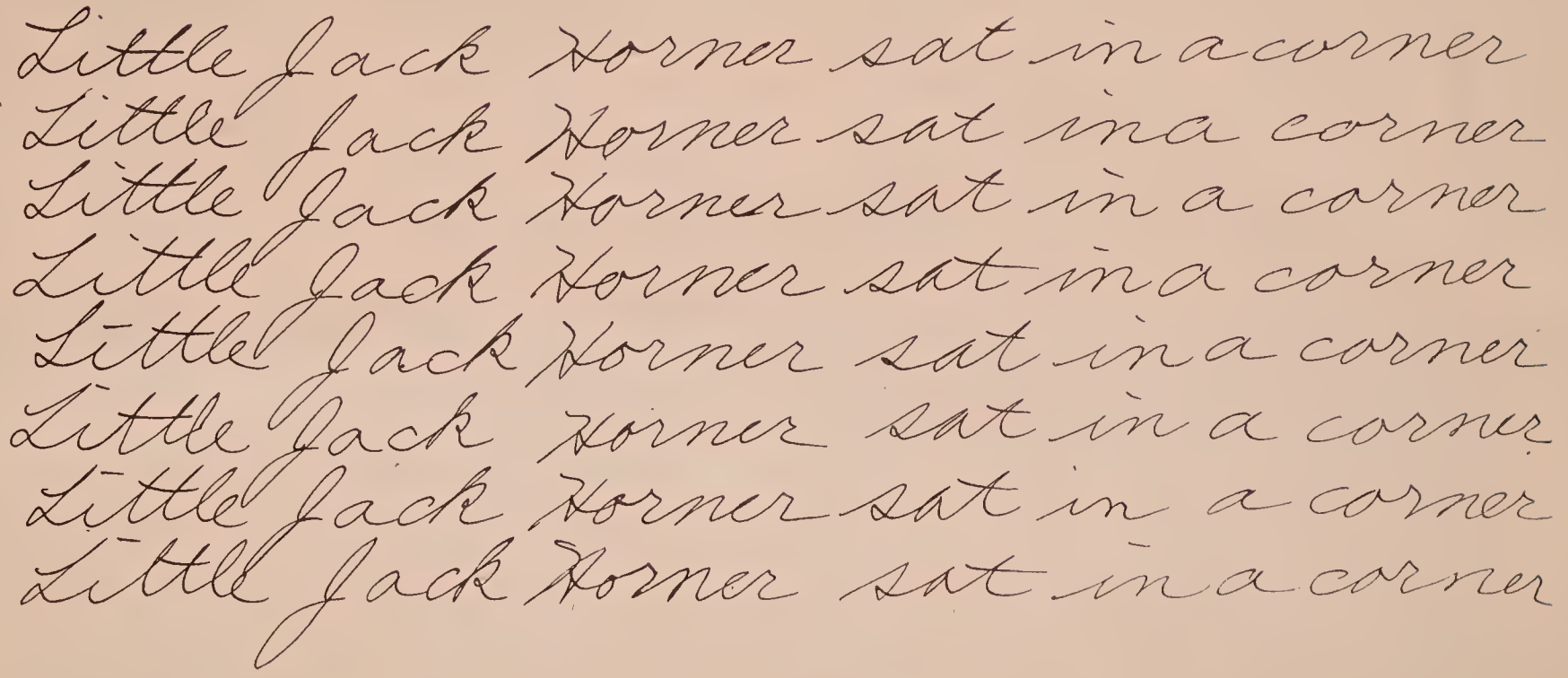
These remarkable specimens are the culmination of arm movement, large writing in the primary grades. Form was subordinated to excessive speed, but not at the expense of legibility.



4-A Grade—Form, 75%; Movement, 152% (130½ letters); Quality, 114%.

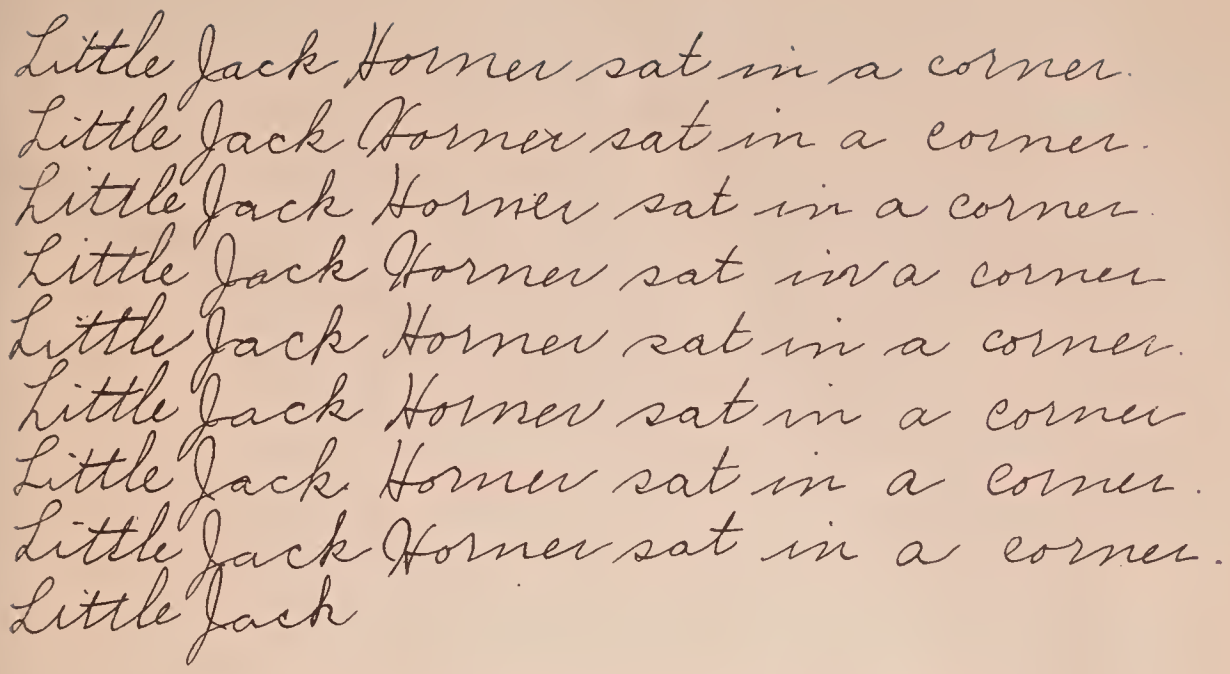
Such writing stimulates mental alertness and is far more serviceable for language expression than slow, cramped, labored effort. This specimen and speed would do credit to an eighth grade pupil and teacher.

Writing of this nature is healthful as well as efficient because posture is good and arm and fingers co-operate to maintain legibility and attain speed, for arm action is necessary for ease in order to maintain speed.



5-A Grade—Form, 70%; Movement, 112% (112 letters); Quality, 91%.

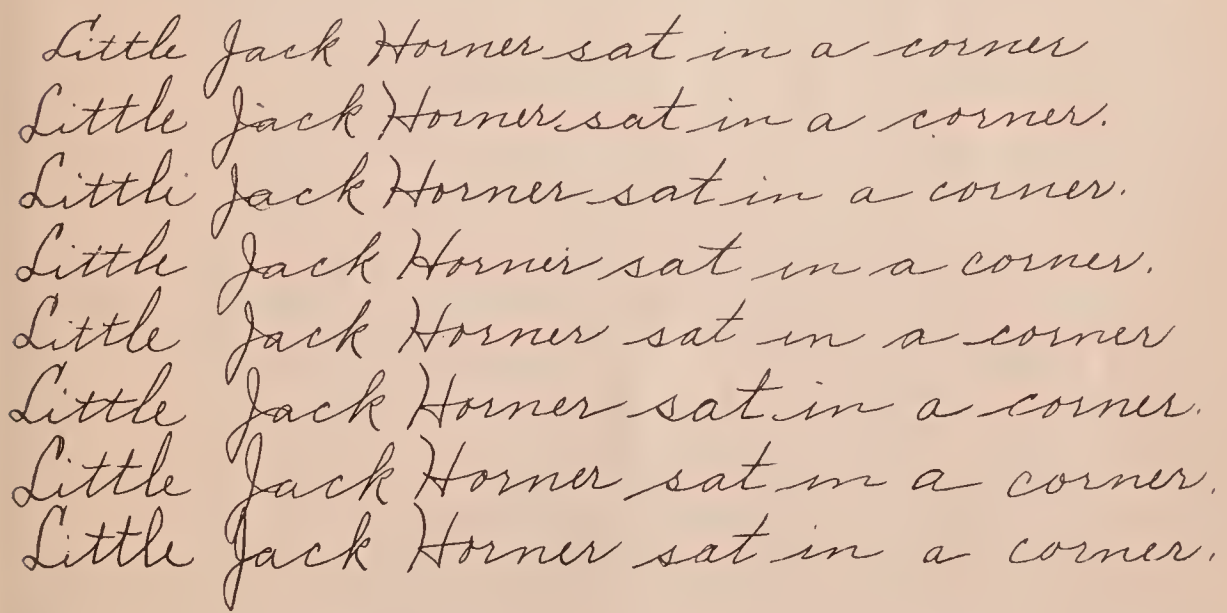
When the surveys were planned and the tests given, no idea was entertained by Supt. Prout, teachers, or pupils that these specimens would be worthy of publicity.



6-A Grade—Form, 72%; Movement, 105% (120 letters); Quality, 89%.

Twenty-four words in a minute, written as well as the above, is no mean accomplishment. Can you beat it?

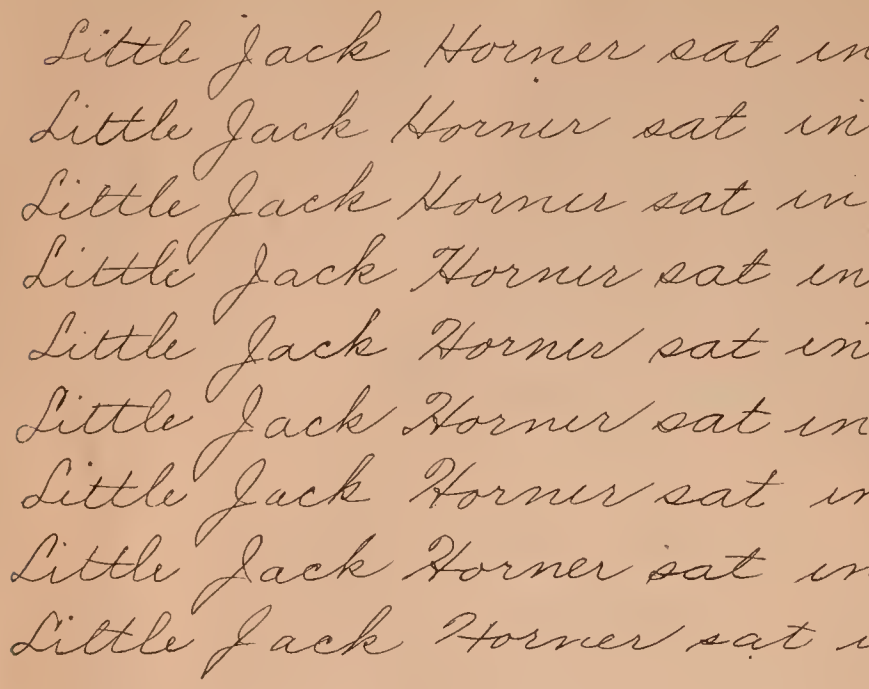
Quality and Quantity Should be Equal



6-A Grade—Form, 75%; Movement, 102% (116 letters); Quality, 89%.

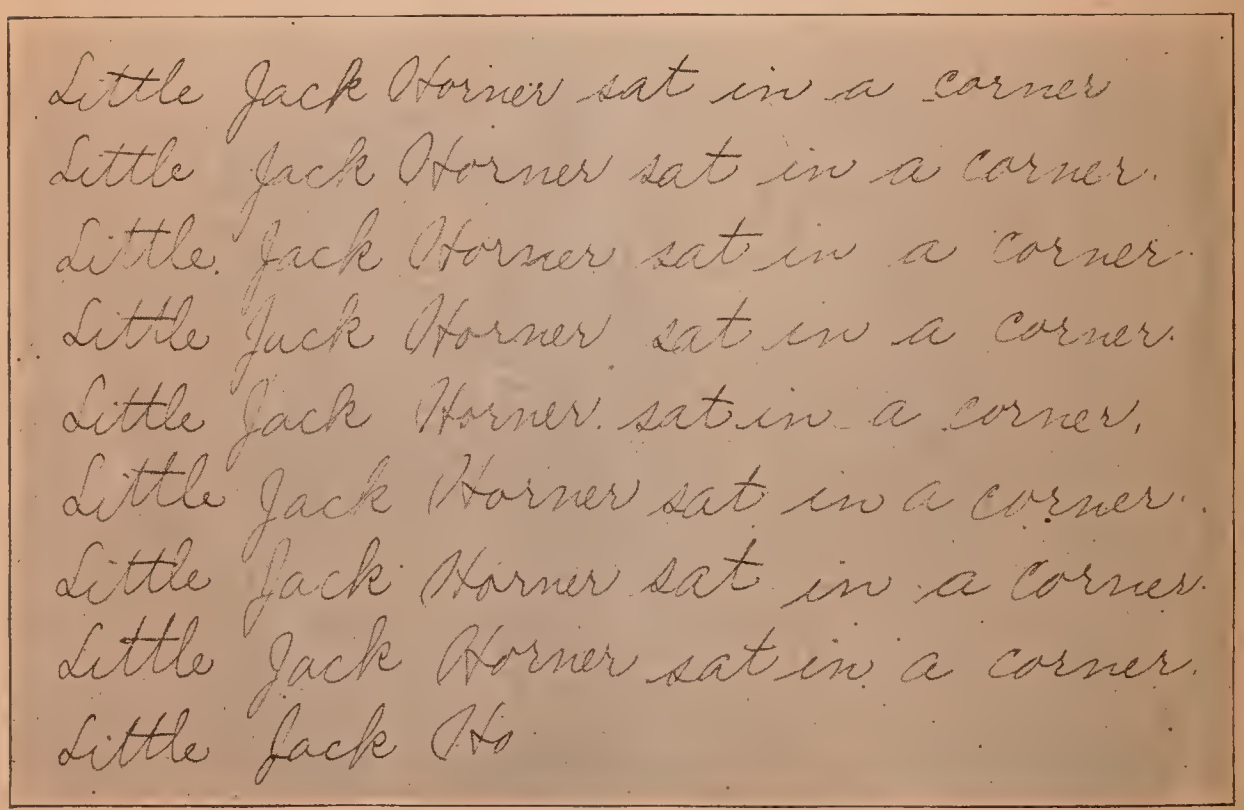
Little Jack Horner did something more than sit in a corner when he co-ordinated effort well and rapidly enough to produce the above 232 letters in two minutes, or about 750 strokes and motions in two minutes.

These results didn't "just happen." Nor are they the result of special supervision, or over work. They are the product of well-planned, co-ordinated, day-in and day-out work in writing, spelling and language work.



7-A Grade—Form, 75%; Movement, 100% (128 letters); Quality, 88%.

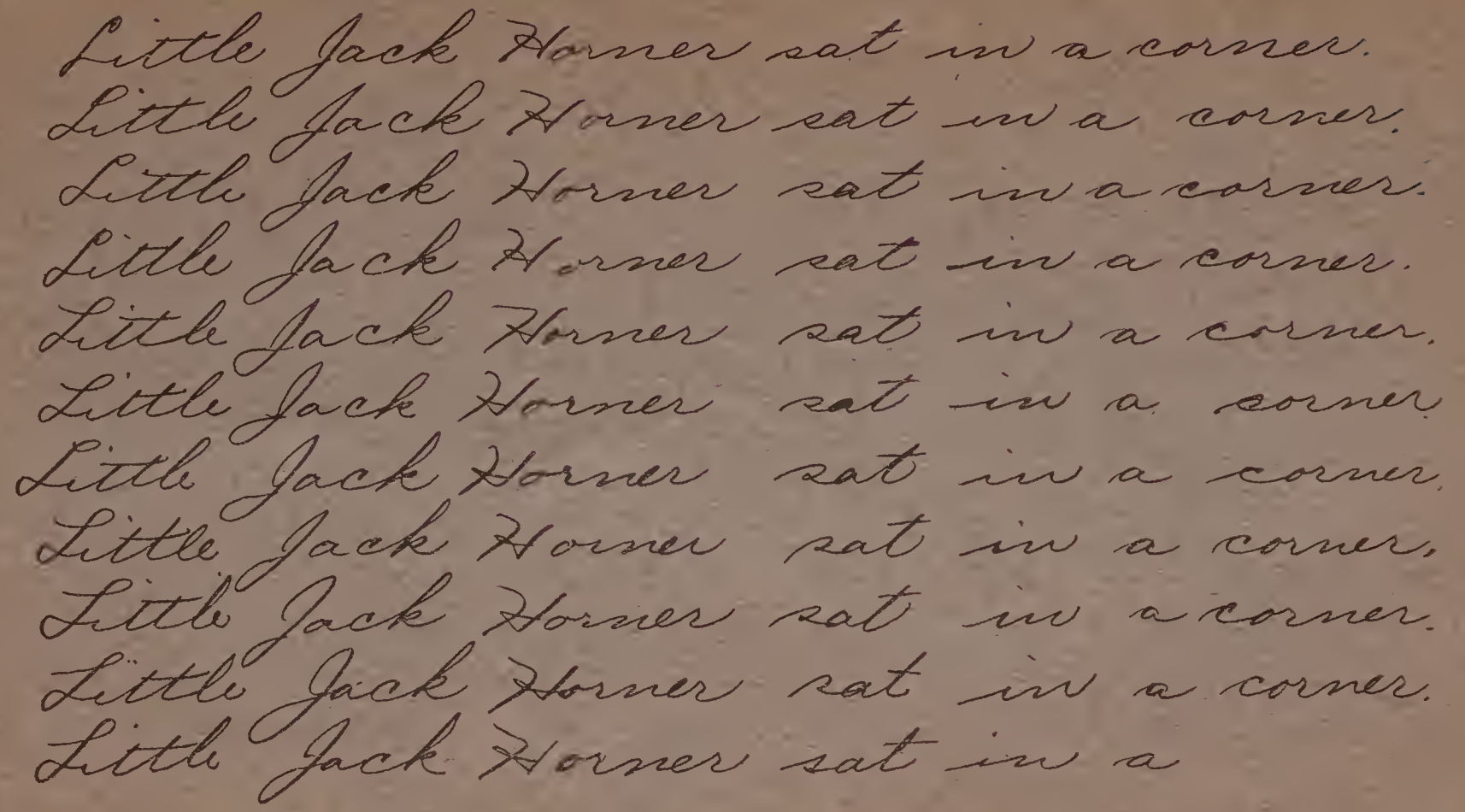
The individuality in many of the specimens is marked, bespeaking emphasis upon essentials and the soft pedal on the non-essentials.



7-A Grade—Form, 70%; Movement, 95% (122 letters); Quality, 83%.

Who's going to furnish us with as interesting, authoritative, stimulating, and surprising survey, accurately taken, as Supt. Prout has this year?

Thirty-one words a minute is a good gait for a telegrapher or a bill clerk, but how about a sixth grade pupil pen-motoring at that rate of speed and doing it more than legibly, even sightly?



6-A Grade—Form, 66%; Movement, 136% (156 letters); Quality, 101%.

There's nothing slow about the Zaner Method except its recognition by superintendents who have been mislead by competition and road agent supervisors.

Thirty-four words of five letters each is crowding the typewriter.—A little less speed and the form would be more than legible. Watch out for a year hence!

Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner,
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner,
Little Jack Horner sat in a corner
Little Jack Horner sat in a corner,
Little Jack Horner sat in a corner.
Little Jack Horner sat in a corner,
Little Jack Horner sat in a con

7-B Grade—Form, 60%; Movement, 134% (172 letters); Quality, 97%.

Copies of this Survey and Standards may be secured for 10 cents from the publishers, ZANER & BLOSER, Columbus, Ohio.

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